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CHOICE BULBS FROM SEEDS.

EVERY year the practice of growing one's own gloxinias, begonias, etc., from seed becomes more general. To true amateurs the work, though at first difficult, is fascinating, and for those who wish to use the bulbs in large quantities, is economical as well. Often the building of one's experience with such plants "from the ground up," as is necessary when they are grown from seed to flower, brings the grower to a fuller understanding of their needs and leads to greater success than when bulbs are purchased.

FREESIAS.

As early in midsummer as ripe freesia seeds can be obtained it is best to procure and sow them. This will usually be in July. Mine were sown in an empty cold-frame that had been used for violets, and the rich, light, sandy loam that it contained was top-dressed with a little leafmold and crumbling old manure. The seeds were sown thinly over the surface, so that transplanting was not necessary, and covered lightly. The soil was then well moistened, the sashes placed over the frame, shaded, and further treatment suspended until the seedlings should appear. In two or three weeks tiny green points were thrust above the soil all over the frame and the sashes were taken off to give more air. Strips of lath were laid across the frame to give needed protection from hot midsummer suns, and until October the little freesias grew along sturdily with no care beyond an occasional weeding and watering.

As frosty nights came on, the sash was replaced, and the frame banked up with sods as for violets. I am sure that it was not entirely frost-proof all winter, yet the freesias kept green and healthy to the tips of their leaves, very properly drying off for their yearly rest in early summer. Early in August the plump little morsels of bulbs were transplanted to pots of

rich, light soil, watered well and then plunged to the rims of the pots in the old soil of the frame. No more water was given them until they again showed signs of life; this, however, they did very promptly, and were rewarded with liquid stimulants once a week. Before frost the pots were removed, a few at a time, to a cool sitting-room. Early in December the freesias were strong young plants with healthy green foliage and an abundance of sweet, white buds. By Christmas almost every pot in the window was wreathed with dainty, fragrant sprays of flowers.

Freesia bulbs increase four-fold in a season, so that since our seedlings began

as is customary for pots of tulips and hyacinths, for young freesia shoots come up very quickly and this bleaching would greatly weaken them. The main point to observe in their culture is to keep them cool and to have the plants grow stocky.

CYCLAMEN.

As a rule the cyclamen grows slowly, but for the gardener who will have patience its culture from seed is perhaps surer and easier than that of any other plant of its class. The seeds may be sown any time between September and March, the sower fixing upon it according to the time bloom is wished from the plants. It takes from twelve to fifteen months from the time the seed is sown to

get the most willing cyclamen plant into bloom. The seed-pan, pots, or boxes must be well drained, containing about two-thirds rough drainage and one-third light, loamy soil. I have found it a good plan to make this loam rich with well decayed manure from cattle stalls, in order to hurry up the slow-growing, little tubers from the very first. If the soil is made quite rich all through the subsequent repottings, considerable time may be saved in getting the plants into bloom.

If the seeds are sown thinly the first

usual transplanting may be omitted. It is not necessary to cover them more than an eighth of an inch. The seed-pans should then be set where they will have good light, but no direct sunshine. If the temperature can be kept near 60° it will be better for the young plants. At the first transplanting, necessary when they are three weeks old unless sown thinly, the seedlings should be set two or three inches apart in boxes of rich soil, or in small pots. When large enough, transfer them singly to five-inch pots. If plenty of water and fertilizers are given they should grow actively all spring and summer.

The best soil that I have tried for them is three parts of sod loam to one of well



A FIFTEEN-MONTHS-OLD SEEDLING CYCLAMEN.

to multiply we have not found it necessary either to buy bulbs or to sow seeds again. The plants grow and bloom regularly in fall and winter, but demand a month or two of rest in summer. Unlike most other bulbs they can be forced on from year to year, increasing in number and strength all the time. A dozen freesia bulbs may be planted in a six-inch pot and this should be done as early in midsummer as is possible to procure the bulbs,—here is another advantage in growing one's own from seed. Until cool weather the pots should be kept outdoors in a lightly shaded frame or bed, where they can be plunged to the rim; but do not cover the tops of the pots with soil,

decayed fertilizer from cattle stalls. In fine weather syringe or sprinkle the plants every day unless they are in bloom; morning is the best time for this in summer, the afternoon in winter. Insects that cut off the stems of the cyclamen or eat the leaves, can be kept away by scattering fresh tobacco stems under and around the plants. The cyclamen is now largely treated as an annual by many of the best gardeners, fresh seeds being sown every year, and the plants thrown away after their first season of bloom is over. We amateurs usually prize them too much for this, and know from experience that a well-grown cyclamen will give fine bloom until three years old.

TUBEROUS BEGONIAS.

These are among the most difficult of the summer blooming bulbs to grow from seed, but after one has grown a crop or two and has the "know how" the work seems comparatively simple. Begonia seed is very fine and there is very little of it in a packet. A five- or six-inch pot is large enough to sow one packet in. Fill the pot half full of drainage and then to within an inch of the rim with rich, sandy loam that is moderately moist and firm. The surface must be very smooth and finely pulverized; this is usually accomplished by sifting the soil. After the seed has been dusted evenly over the soil, press it down firmly and gently with a bit of board. No covering of soil is needed, but a pane of glass must be placed over the pot and tilted up a little at one side. The young plants will be healthier and stronger if the moisture that collects on the glass is wiped off every morning. A warm, shaded nook, free from draught, is the best place in which to stand the pot. When the little seedlings appear there is danger of their damping off unless soil, temperature and moisture have been well adjusted. To prevent this we usually prick them out when tiny three-leaved dots, upon the point of a pencil, into a flat, or shallow box, setting them about an inch apart. This box should be well drained and filled with one-half sandy loam and one-fourth each of leafmold and fine, crumbling manure. It will be fatal to the little plants if the surface of the soil should become dry now, but only tepid water should be given them very carefully through a fine rose. After they are a quarter of an inch high the critical time in their lives is past.

The second transplanting may be either into small pots or other shallow boxes, which must be set in a hotbed or window. They dislike a close atmosphere and hot sunshine in their earlier days. It is not safe to plant them in outdoor beds until the middle of June, and, whatever may be said to the contrary, they thrive much the best in shaded beds; make these rich with well decayed fertilizer, and mulch the plant with litter as soon as the weather begins to grow very warm. Plants from

seed sown early in spring should bloom in the fall of the same year.

GLOXINIAS.

Gloxinias grow quickly and easily from seed if given the treatment outlined for tuberous begonias. They are not so liable to damp off as begonias and transplant more readily, but, unlike the begonias, do not bear bedding out. The final transplanting must be into pots or boxes set on a shaded porch or bed, for exposure first to sunshine, then to rain, ruins their soft, massive foliage. They are the showiest of all summer-blooming bulbs, and bloom among the earliest after seed is sown. I am experimenting this year with plants grown in outdoor frames covered with lattice work, and so far they seem to be thriving finely.

L. GREENLEE.

SPRING AND SUMMER IN MY GARDEN.

JUNE 23d. The first Shirley poppy uncloses this morning; the bachelor's button began some time ago; pansies and nasturtiums are beginning to bloom, and there are a few hollyhocks,—last year I had thirty sorts, white, white with yellow eye, pink, pink with crimson eye, black, scarlet, crimson, purple, single, double, fringed, etc. Some years ago I had five or six good double varieties and a few single ones, and all have hybridized, selfsowed, and become single, as they saw fit, with the above result. I am not sure that a double hollyhock when it becomes single again will be larger than the normal form, but it seems so. There was a splendid display for weeks, and though pinched by drouth last fall and this spring I am not destitute of hollyhocks now. A good assortment of double hollyhocks is a good thing to have, but single ones are just as pretty and showy to me, and are much more hardy and vigorous, growing taller and bearing more flowers. Why flowers must look like cabbages before they can pass I have yet to find out. Get a lot of the florist's best strains, then let them mix and selfsow. You will have a world of flowers, and their endless variations will interest you.

June 25th. The rosy lythrum, *Lythrum salicaria*, is showing its numerous erect spikes of flowers, tapering upward into small buds. It began some days ago and will last a long time. It grows very erect, with many stems three to four feet high from one root. The stems, half an inch through, are of hard wood at the base, and yet the plant is herbaceous, dying down to the root every year. Many years ago I sent for a packet of the seeds, and the great, hard, woody roots live indefinitely, apparently, never spreading or getting much larger,—a very long-lived and permanent plant. The seeds scatter and come up here and there, but it never becomes a pest. The foliage is dense

and good, the leaves being long and narrow. If you want a summer hedge that will last forever and be good as new after that, plant the rosy lythrum. It is a swamp plant when wild. Fresh seed sown in the fall will increase it easily; this is better than to divide the roots.

June 28th. The perennial pea, *Lathyrus latifolius*, is a good plant, hardy and vigorous, giving quantities of flowers every summer for indefinite years. This plant is perhaps twenty years old; it has fourteen stems from its one root and usually gets nine or ten feet high, beginning to bloom when small and branching and budding in long succession. There is a white sort, they say, but I have never seen it; this one is bright red. The flowers are borne on erect spikes, eight to twelve on each stem all in bloom at once, making a mass of color visible from quite a distance. The large back petal (vexillum, or banner) is almost a half circle and other differences make the flower very unlike the sweet pea, though the size is not far from the same; it is entirely without odor. The foliage, very like the sweet pea's in form, is very much larger, the leaflets being three or four inches long. It seeds freely, but never selfsows and all my efforts to increase it from the seed have failed,—neither fall or spring sowing has ever succeeded. A neighbor last fall put the whole pods into the ground and got plants this spring. All this leads me to advise you to order roots rather than to sow the seed. This plant is under the drip of the eaves, which may be better or worse for it, but the grass is thick where it grows and a support of twine is all the culture it gets.

An indispensable plant is the great azure larkspur, *Delphinium formosum*. Six feet high when well grown, it has many stems rising from a dense mass of dark foliage, each with one or more great spikes of the richest blue flowers; no flower that I ever saw makes a braver show. The plant is perfectly hardy, never spreading or selfsowing it lives and flowers right on for ever, perhaps. Growing so tall and with such a weight of bloom the stems often fall down in all directions, but a stout wire hoop put round them and fastened to a stake or two will prevent this. These plants came from seed, but I incline to advise plants instead. Each flower has a white center or eye, and is of a paler blue outside. No garden should be without it. The bee larkspur, *D. elatum*, from Siberia, is a pretty and interesting plant, never seeding or spreading, but highly permanent; five feet high with plenty of rain, and two or three in a drouth. Its flowers are so blue they are almost black; the foliage is bold and strong, the long spikes, many from one root, are always erect,—it is, however, a small affair beside the *formosum*. Both are now in bloom, and will be for some time, the *formosum* often sending out

smaller secondary spikes after the large ones are gone.

The pyrethrum Golden Feather is in bloom, but its flowers are not a success, merely a single row of white rays around a yellow disc; but there is another pyrethrum,—the double feverfew of the catalogue, I think,—that is better; it has white, button-like, double flowers borne in vast profusion for nearly the whole season; it has been in bloom for almost a month already. Easily started from seed it proves an ironclad perennial with finely cut foliage; the stems are not far from two feet high.

The double pot marigold Prince of Orange, *Calendula officinalis*, now begins its season which will last till winter; its flowers frozen stiff next November and buried in snow will be as yellow as ever. It selfsows freely and transplants easily; no flower can be better for children's gardens, and its flowers of golden orange are very showy. Selfsown for eight or ten years it becomes somewhat less double, but never gets back to the old single form that I ever saw.

The tassel flower, *Cacalia coccinea*, is a pleasant little annual with most of its leaves near the ground, and scarlet flowers on rather tall and slender stems a foot or so high; its season with me is just beginning. I think it selfsows—if not, it is very easily grown.

E. S. GILBERT.
Canaseraga, N. Y.

NOVELTIES OF 1896.

THE supreme test of a floral novelty is to plant it in the cold soil of the far North and watch its growth. If it comes up with a healthy look and at once proceeds to grow; if it blooms freely in the open ground and shows a determination to survive in spite of chilly nights and scorching windy days; if it makes headway towards maturity against many adverse surroundings, then it is something to be petted and treasured for coming years.

It is easy enough to grow tropical plants in greenhouses or in sunny windows near the sitting-room fire. With proper care and attention the *Victoria regia* water lily can be produced in Quebec and figs made to ripen in Labrador. They are all right for men with means and plenty of leisure, but what the people want are new and beautiful flowers that will thrive outdoors and add fresh charm to the flower garden.

Believing that every gardener who adds a hardy novelty to the list of garden flowers is a benefactor of the race, I have tested a good number of the newly introduced seeds this year, with the view of learning their actual value as every-day friends. On the whole it has been an average season. The last frost came June 2d, since when there have been weeks of intense heat, followed by thunder showers and high winds. All vegetation has grown luxuriantly, so that flowers have had to give way to foliage. Still, it has been a good year for making fair trials, and the results obtained may be considered reliable.

Cupid, the widely advertised dwarf sweet pea from California, has not come up to expectations; it is not only slow to germinate, but the growth is tardy and uncertain. The blossoms blight under the hot sun, and the leaves are apt to rust if water is not applied frequently. The flowers are very beautiful and laden with

Of course, the double sorts purchased from the greenhouse are the favorites with those who can afford the outlay; but for massing on the sunny sides of evergreens or for adding bits of color to dull areas, I know of nothing better than the California petunias, unless we still prefer the grand new Shirley poppies, which to my mind have no peer in all the garden.

The great Japanese morning glories are my especial pets. They are so big and brilliantly painted and the foliage is so green, and they can be made to cover so many unsightly spots, that I wonder how I lived so long without them. A bower of these grand flowers dripping with morning dew remind one of an oriental pageant, and visions of the Arabian Nights dance before my eyes whenever I look at them. They are a little too slow for our short seasons, however, and should be started in pots in April. As they are easy to transplant one can well afford the extra labor.

The yellow aster is worth keeping. Like other tall asters, it is slow in blooming, and must be started indoors; but once under way it fairly explodes with bloom. Try it.

Though not a novelty by any means, cosmos is comparatively new to most of us. Let me confess that it is a jewel beyond price. Sow it under glass at the time the early tomatoes are put in, and it should be from four to six inches high when ready to put outdoors. Give the plants plenty of room, stake them up if



A FRAME OF SEEDLING BEGONIAS.

rare fragrance, yet I cannot say they exceed any of Eckford's seedlings. For bedding purposes Cupid cannot compare with Vick's dwarf sweet alyssum, which is easy to grow and a thing of beauty for months. Of course, after Cupid has been grown from native seeds for a few years and become weaned from the wonderful climate of the Pacific coast it may show up better, and may find a place in the flower garden; but until it gets over several bad habits it will never be a "down east" pet. The hardy and transcendently beautiful new kinds of tall sweet peas can still stand at the head of the list.

The California petunias are a decided acquisition, and take to our ways well. They not only grow stouter and faster than native sorts, but the flowers are much larger and more brilliantly tinted; the seeds germinate better than the common sorts with me, which is an important consideration where every day is precious.

exposed to high winds, and they will deluge the garden with beauty. A clump planted at a corner of the lawn is far more beautiful than any evergreen, and the flowers are incomparable. I am sorry to confess that the hardy hibiscus dies here every winter if left outdoors. No protection, but transplanting to the cellar with the fig and India rubber plants, will save it. While speaking of beautiful flowers, remember and plant a packet of Vick's double hollyhock seeds in a window box next March. If urged a bit they will be ready to bloom in July. Paraphrasing a remark of the immortal Isaac Walton about the strawberry, perhaps God could have made something grander and more beautiful than a row of these hollyhocks, but I am certain He never did, and feel pretty sure that He will not try for some years to come.

DOWN EASTER.

Bangor, Maine.

WYOMING WILD FLOWERS.



"A ocean of flowers!" that is what a friend exclaimed after driving several miles over the plains and foothills. It would require volumes to properly set forth and describe all we have here, so I will plunge at once into the subject and give brief notice of a few of the most prominent forms, paying particular attention to some varieties adapted to cultivation.

Our State is composed of plains, mountains and mountain valleys. The plains are 4,500 feet to 8,000 feet elevation, while some of the mountains rise to from 200 or 300 feet to 14,000 feet. We are in a valley surrounded by mountains in the southeastern part of the State, our elevation being about 1,000 feet, while twenty-five miles west the Laramie mountains rise to 11,000 feet. Our valley is a grassy plot of sandy loam, some places gravelly, and is farmed only under irrigation, so that plants growing wild may be expected to endure almost any degree of drouth.

First in the spring may be seen two plants just peeping through the ground, often blooming amid snow and ice. These are *Phlox cæspitosa* and *Townsendia sericea*. The former white and pink, very sweet scented and growing in mats sometimes a foot or more across. The latter looks like a large daisy with pink rays and bright yellow flower head. Closely following these and growing in great abundance all over the plains and, later on, up the mountain slopes, comes the white mountain lily, *Leucocrinum montanum*, growing about four inches in height, bearing on top of the stem a number of sparkling, waxy white flowers of great beauty. This plant would be well worthy of cultivation in our garden, but I am unable to state whether it would thrive in an Eastern garden or not.

When this lily gets started into bloom the leguminous plants begin to show their flowers. The first of these is *Astragalus spatulatus*, growing about one and a half inches high and forming great patches sometimes a rod or more in diameter, of bright clear blue, the small pea-formed blossoms being so numerous as to completely hide the foliage.

By the close of the first week in May the windy season (for our winds are strictly periodical) is over and the flowering plants are assuming a taller, freer growth. The *Oxytropis*, with its downy gray-green foliage and creamy flowers in long spikes, may be found on every gravelly hillside facing the north, while on the opposite slopes are to be seen *Thermopsis rhombifolia*, locally known as "yellow sweet pea," covering the slopes with patches of brilliant golden yellow, while scattered about in great abundance is the dwarf blue pentstemon, *P. cæruleus*, a plant of rare beauty. Occasionally a specimen is found flushed with an in-

describable color, being a mixture of pink, purple and yellow "sunset" tints. *Pentstemon cristatus*, on rocky slopes, eighteen inches high, with very large beautiful flowers of a pink shade; in the moister valleys the large *Pentstemon glaber*, sometimes three feet high with long spikes of deep blue flowers, a truly splendid plant. I am of the opinion that all these pentstemons will do well in garden culture, particularly the last named.

Blooming with the *Pentstemon cristatus* and in same location, may be found the *Calochortus* or butterfly lily. In the mountains this grows in wonderful profusion, and I have gathered specimens over three inches in diameter, the waxy white petals with the rich brown, yellow and crimson "butterfly" spots at the base, forming a flower of exceeding beauty. These plants would undoubtedly be a valuable addition to gardens in many parts of the country. They are hardy, growing from small tulip-like bulbs.

About the middle of May our wild sweet pea, *Lathyrus ornatus*, comes into bloom, growing in large patches, its large bright crimson-purple, white standard, sweet scented flowers being truly "ornate" indeed. They are sweeter scented than the ordinary garden sweet pea, flowers are larger and very richly colored. Their chief fault is their brief season of bloom; but they are hardy perennials, and may be expected to show themselves regularly from year to year. At the same season we have a representation of the *dicentra* family, a yellow *Corydalis*, *C. aurea occidentalis*.

Our asters are numerous and beautiful and begin to bloom in May and continue to October.

The *œnotheras*, evening primrose, are well represented, but perhaps the most interesting is the variety *pinnatifida alba*, a very dwarf species with flowers three or four inches in diameter, of a pure sparkling white. This does very well cultivated in gardens, the flowers being larger and more abundant.

During July and August there are two common and very noticeable plants in bloom, viz: *Argemone albiflora* and *Cleome integrifolia*. Either will make splendid tall growing plants. The *argemone* in cultivation is two to three feet high, with flowers six inches in diameter, pure white with golden stamens, a fine and conspicuous ornament. The *cleome* grows three feet or more, branching freely, and every branch tipped with a long spike of pretty pink flowers with long stamens. These plants should find a place in all gardens where tall growing plants are desirable.

Cactus? Why, yes, we have cactus everywhere, the most common being *Opuntia*, or lobster, which covers the plains and lower mountains all over the state. Also may be seen numerous plants of *Cereus echinocactus*, *C. viviparius*, and

Mammillaria. The latter, through rare, is the most beautiful cactus in this region, growing to the size of a small melon with a coronet of delicately beautiful red flowers.

At present writing (August 15th) the asters and golden-rods are vying with the *cleome* and *liatris* to make the plains a place of brilliant color, while in the mountains are many species which bloomed earlier on the plains.

There are many varieties of plants in the State which are strictly alpine in habitat and are not found below 8,000 to 10,000 feet. The more beautiful and noticeable of these I will mention; the scientific names of many of these are not known to me as yet, and I use only local names and description:

The Indian-pink is a tall growing plant, with long spikes of splendid scarlet and yellow flowers, somewhat similar in shape to *Salvia splendens*. Larkspurs of the intensest blue come in great abundance at 9,000 feet. Blue bells (*campanulas*) in three varieties are very common in the mountains, the most abundant being the *rotundifolia*, the true blue bell, sometimes called hare bell; these form large patches of bright blue around the rocks anywhere from 8,000 to 13,000 feet. The cañons and diminutive parks high in the mountains are always well supplied with water, and here may be found rare and delicate little orchids, and the fine Lily (?) *amplexifolium* with its large scarlet flowers. Another member of the lily family which is in bloom at present, high in the mountains, is *Erythronium grandiflorum*. Growing in wet places may be found the *Dodecatheon*, furnishing its bright crimson-purple flowers in great abundance. I saw it in one instance growing in moss on granite rocks, just at the brink of a water-fall, something like thirty feet in height. The huge pines, the granite walls of the cañon, the dark moss, the sparkling flashing water, and the white mist and glowing crimson of the flowers made a scene of wondrous beauty which I shall not soon forget.

At 9,000 to 12,000 feet may be seen the *Aquilegia cærulea*, its large blue and white flowers lifted on stout stems from the crevices of rocks. Messrs. Vick introduced this noble plant to culture several years ago, and I think if all could see it as I did, clinging to the rocky sides of Laramie mountain, there would not be a garden in the country without it, by another year. It is truly the queen of columbines. On high rock spurs of the mountains may be seen in great profusion *Geranium cæspitosum*, pink flowered veined crimson, the most beautiful wild geranium I ever saw; *Gaillardia aristata*, large brilliant scarlet and brown flower heads with orange shaded rays; and *Oxytropis splendens* with its long spikes of pea-shaped glowing crimson-purple flowers.

I find that I must stop for I could just go on until the Magazine would fail to contain the article (the waste basket would get it instead), and then not tell you the half of it—plains, valleys, river bottoms, cañons, snow-clad, tree-clad, or bare rock mountain—ever present as a splendid background; soil dry, wet, rocky, sandy, fertile, barren, all these furnishing their quota of beauty. Just come and see it for yourselves. The wild flowers of Wyoming are the most brilliant in color I have ever beheld, either in this or a tropical climate. Our State botanist has listed about 1,500 species, yet I sent him six varieties which were new to him right from a locality which the botanical expedition had visited twice, so it is probable that there are many more which have not as yet been listed.

I must not forget, in conclusion, to note the *Yucca angustifolia* which grows in great abundance all over the plains and lower levels. It does not branch, but the stem is hung with a solid mass of cream bells from base to summit. It is, if possible, more beautiful than *Y. filamentosa*, so well known in eastern gardens. Also the "bush morning glory," *Ipomœa leptophylla*. This is a stiff growing, upright much branched shrubby annual, about eighteen inches high and sometimes five or six feet in diameter, long narrow light green leaves and large morning glories of a rich crimson; it is a strikingly noticeable plant and might be profitably introduced into gardens, together with the linums (flax), blue and yellow, which grows so abundantly on the sand hills. These and the "morning glory" are now in bloom. But I must stop for fear of the waste basket aforesaid, and if given space this time I may write more on his subject another day.

S. L.

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OUR BIRD FRIENDS.

AN elaborate article, or series of articles, written by Florence A. Merriam, entitled "How Birds affect the Farm and Garden," was published in *Forest and Stream* and has since been reprinted by the same publishers, for general circulation, in pamphlet form, and sold at the low price of five cents. It deals with the characters of a large number of our native birds, giving some of their habits and showing their usefulness to the farmer and gardener as destroyers of injurious insects. The pamphlet is handsomely printed and illustrated. The illustrations herewith are not those of the original article, but are true to nature.

Some extracts are here made, but we wish that every one of our readers had a copy of the pamphlet itself. The main facts are based on observations and examinations made for several years past by members of the Department of Agriculture at Washington, and reports of the same already issued or now being issued by the Division of Ornithology:

After the examination of about forty

birds, the only one actually sentenced to death is the English sparrow. Of all the accused hawks only three have been found guilty of the charges made against them—the goshawk, Cooper's and the sharp-shinned—while the rest are numbered among the best friends of the fruit grower and farmer. Of the woodpeckers, the sapsucker and redhead may be beneficial or injurious, according to circumstances, but the rest of the family are highly beneficial. To most of the remaining birds tried the evidence is decidedly creditable.



CATBIRDS AND NEST.

The crow, crow blackbird and cedar bird are acquitted as doing more good than harm; and it is proved that agriculturists owe especial protection and friendship to the phoebe, kingbird, catbird, swallow, brown thrasher, rose-breasted grosbeak,



CEDARBIRD.

house wren, vireos, cuckoo, oriole, shore lark, loggerhead shrike and meadow lark.

CATBIRD.

The catbird is persecuted because it eats fruit; but, although stomach examinations show that it does eat considerable in some parts of the country, one-third of its food consists of insects which annually destroy a large part of the farmer's profits. As Mr. Judd, in speaking of the catbird, says: "By killing the birds their services as insect destroyers would be lost, so the problem is to keep both the birds and the fruit." The study of this matter has led to one of the most important discoveries

made in the investigations of the Division of Ornithology. It has been demonstrated that some birds—the catbird among the number—actually prefer wild fruits to cultivated, and that most of the complaints of depredations come from parts of the country where there is little wild fruit, so that by planting berry-bearing bushes and trees it may be possible to prevent losses to cultivated fruits and at the same time to attract the birds and so secure their much-needed help in destroying insect pests.

The catbird is an excellent example of this. Experiments show that he prefers the red mulberry to cherries and strawberries, and stomach examinations show that he eats twice as much wild fruit as cultivated, while one-third of his food is made up of insects. A slight idea of the good he does in destroying pests may be had from the fact that thirty grasshoppers were found in each of five stomachs. Reports show that he does much more harm in the central United States, where wild fruits are scarce, than near the coast, where they are abundant. Mr. Judd suggests that the crops of cherries and strawberries can be protected by planting the "prolific Russian mulberry, which, if planted in hen yards and pig runs, will afford excellent food for the hens and pigs besides attracting the birds away from more valuable fruit."

The verdict in the case of the catbird is, that he is already one of the farmer's best assistants, and that by a little effort the small amount of harm he does might be counteracted so that he would do unalloyed good in the farm and garden.

KINGBIRD.

The kingbird is exonerated from the charge of destroying honey-bees, or if not wholly the damage he does in this way is very small and perhaps unintentional.

On the other hand, the kingbird had destroyed a number of the worker bees' worst enemy, the robber fly, which has been known to kill 140 honey bees in a day; so this bird's reputation stands well cleared. More than this, the good done by this industrious flycatcher does not end with the death of the robber fly. Nearly sixty per cent. of his food consists of insects well known to be injurious. Among them are the gadfly, so terrifying to horses and cattle; the cloverleaf weevil, the destructive rosechafer, ants and grasshoppers.

The swallows and the chickadees are noticed as great insect eaters. Mr. E. H. Torbush, of the Massachusetts Board of Agriculture is quoted as saying of the chickadee that "There is no bird that can compare with it in destroying the female cankerworm moths and their eggs."

CEDARBIRD.

The cedar bird is also known as the cherry bird, but cultivated cherries have been found in only nine out of 152 stomachs examined, which, as Prof. Beal says, "hardly justifies the reputation which the bird has gained as a destroyer

of cherries." He adds that this supposed cherry habit "to the careless and unobservant would condemn the bird to destruction, but the closer observer looks further." Investigation shows that more than half of the whole food of the cedar bird consists of wild fruit which has no value, and that one-eighth of its food consists of insects, among which are some of the worst pests of the country. Furthermore, since the nestlings are fed largely on insects, the greatest number of



RED-WINGED BLACKBIRD.

insects are eaten when fruit is most abundant. The cedar bird eats caterpillars, spiders and grasshoppers, but does most marked good in destroying the elm leaf beetle that strips our village and city trees of leaves. Mrs. Mary Treat writes of one town in which the elms had been ruined for several years before the cedar birds came, and which were afterward comparatively free from beetles. From one calculation it is shown that thirty cedar birds would destroy 9,000 worms during the month when the cut-worm caterpillar is exposed.

To prevent the cedar bird from eating cultivated fruit and to attract it to secure its help in destroying caterpillars it would be well to plant the common bushes upon whose berries it feeds, such as blackberry, wild cherry, choke cherry, sour gum, flowering dogwood, rough-leaved dogwood, chokeberry, red cedar, June berry, hackberry, black haw, black elder, huckleberry, frost grape, barberry mistletoe, or pokeberry.

CROW.

The charges against the crow are (1) that it pulls sprouting corn; (2) that it injures corn in the milk; (3) that it destroys cultivated fruit, and (4) that it feeds on the eggs and young of poultry and wild birds.

Nine hundred stomachs have been examined, but while it has been found that the crow does eat the forbidden food, it has also been seen that the quantity he eats is so small that it is more than counterbalanced by the good he does in destroying injurious insects and harmful animals. Only three per cent. of the total food of the crow is sprouting corn and corn in the milk; the rest that he is credited with is mostly waste grain picked up here and there mainly in winter, and so of no economic value. The injury the crow does to cultivated fruits is trivial. Moreover, the eggs and young of poultry and wild birds which he eats constitute

only one per cent. of his food for the year. The prejudice against him is based on an exaggeration of the harm he does, for in each instance it is proved to be insignificant.

Some intelligent farmers who realize the money value of the services of the crows either feed them old corn during the time when the growing corn is in the milk or else tar the corn before planting, in both cases protecting themselves from the injury the birds may do, and at the same time insuring their help in destroying the pests that will surely menace the maturing crop. Tarring must be done carefully to be successful.

But while protecting ourselves from the possible sins of the crow we must credit him with the good he does; twenty-six per cent. of his entire food consists of insects, the majority of which are grasshoppers, May beetles, cutworms and other injurious kinds. Another of the most important items of the crow's food is mice, and when rabbits and other



BALTIMORE ORIOLES AND NEST.

harmful rodents are added to the list it becomes obvious that the good the bird does exceeds the bad, and that he is deserving the patient encouragement of the farmer. When we consider the work the crow does as a scavenger, our debt to him becomes still more apparent.

THE BLUE JAY.

The operation of this bird is noticed.

The conclusion is that the blue jay has been unduly censured in the matter of eating young birds and eggs, and that, as he does not eat corn when he can obtain mast, he does less harm in eating corn than good in destroying insects.

HOUSE WREN.

The house wren is exclusively insectivorous and therefore highly beneficial. Half of its food is grasshoppers and beetles; it also destroys ants, caterpillars, bugs, crickets and spiders.

CUCKOO.

The cuckoo eats so many caterpillars that the walls of its stomach are filled with hairs, making them look like pieces of felt hat. One cuckoo was found with forty-three caterpillars in its stomach.

ORIOLE.

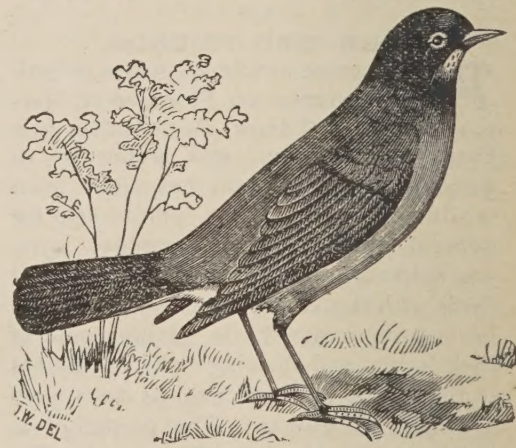
Green corn has been found in one of

113 stomachs and pears in two; but one man who reports that the bird eats grapes adds that it is worth its weight in gold as an insect destroyer. Mr. Lawrence Bruner, in his "Notes on Nebraska Birds," well says: "If we take pains to water our birds during the dry season, they will be much less apt to seek this supply from the juices of fruits that are so temptingly near at hand. Place little pans of water in the orchard and vineyard where the birds can visit them without fear of being seized by the house cat or knocked over by a missile from the alert 'small boy,' and I am sure that the injury to fruit to a great extent at least will cease." Speaking of the Baltimore oriole he adds: "As insect destroyers, both this bird and the orchard oriole have had an undisputed reputation for many years; and the kind of insects destroyed by both are of such a class as count in their favor."

Prof. Beal says: "The oriole is a most potent factor in the destruction of caterpillars, eating so many that if no other insects were taken it would still be classed as a useful bird. It does not, however, restrict its diet to caterpillars, but eats great numbers of injurious beetles and also many bugs and grasshoppers, including beetles that feed on locust and apple trees, and the wire worm, one of the most destructive insects with which the farmer has to contend. In fact the oriole is one of the most useful birds that we have."

RED-WINGED BLACKBIRD.

Mr. Lawrence Bruner says "In the red-winged blackbird we have a friend that we little dream of when we see the large flocks gathering about our cornfields during late summer and early fall. During the balance of the year it is engaged most of the time in waging war upon various insect pests, including such forms as the grub worms, cut-worms, grasshoppers, army worm, beet caterpillar, etc. Even when it visits our cornfields it more



AMERICAN ROBIN.

than pays for the corn it eats, by the destruction of the worms that lurk under the husks of the large per cent. of the ears in every field.

"Several years ago the beet fields in the vicinity of Grand Island were threatened with great injury by a certain caterpillar that had nearly defoliated all the beets growing in many of them. At about this time large flocks of this bird appeared, and after a week's sojourn the caterpillar plague had vanished.

"In winter the red-winged blackbird serves the farmer by destroying seeds of ragweed, foxtail grass and bindweed, while all through the summer it does great good by "destroying myriads of caterpillars, grasshoppers and weevils. Indeed it is without a peer as an enemy to one of our most injurious classes of insects—the weevils."

CROW BLACKBIRD.

Sometimes birds become too crowded in one place and their numbers need to



DOWNY WOODPECKER.

be reduced. This is occasionally true of the crow blackbird, for when it descends upon a field in hundreds of thousands it inflicts real damage. But such instances are exceptional and can usually be prevented. One of the blackbird's commonest pursuits is to follow the plow, and after the birds have been doing it their stomachs are found "cramped with grubs." They also eat the destructive rose bug, curculio, May beetle, grasshopper, cricket and locust. Indeed, Professor Beal's conclusion is that "By destroying insects they do incalculable good."

ROBIN.

The robin is accused of eating cultivated fruits, but examinations show that less than five per cent. of his food is grown by man. As nearly half his food is wild fruit, it would be easy to substitute something for the garden products that he troubles. On the other hand, nearly half his food is animal, including wasps, ants, bugs, spiders, angleworms and a large per cent. of grasshoppers, crickets and caterpillars. He also eats great numbers of March fly larvæ, so preventing much injury to the grass in the hay fields.

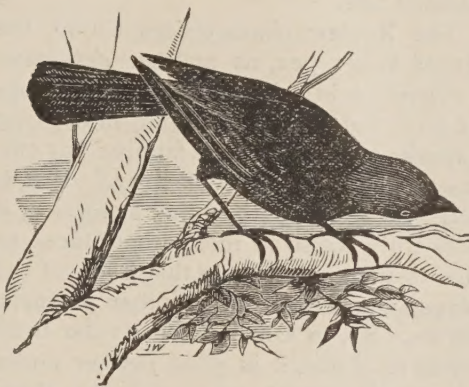
Professor Forbes asks this question: "Will the destruction of seventeen quarts of average caterpillars, including at least eight quarts of cut worms, pay for twenty-four quarts of cherries, blackberries, currants and grapes?" And Mr. Bruner says: "He is a poor business man who pays \$10 for that which he knows must later be sold for 15 cents or even less. Yet I have known of instances where a robin that had saved from ten to fifteen bushels of apples that were worth a dollar per bushel, by clearing the tree from canker worms in the spring, was shot

when he simply pecked one of the apples that he had saved for the grateful or ungrateful fruit-grower."

The robin is such a favorite that it is interesting to know what wild fruits can be planted to attract him and draw his attention from the small fruits of the garden when he chances to take an undue amount. The wild fruits found in his stomach are dogwood, wild grape, wild black cherry, choke cherry, bird cherry, mulberry, greenbrier berry, cranberry, blueberry, huckleberry, holly berry, elderberry, hackberry, service berry, spice berry, hawthorn, bittersweet, Virginia creeper, moonseed, mountain ash, black haw, barberry, pokeberry, strawberry bush, juniper, persimmon, saw palmetto, California mistletoe and bayberry.

DOWNY WOODPECKER.

This little woodpecker, the smallest of the family, has been accused of eating fruit, but in 140 stomachs examined apple was found in only two and strawberries in one. On the other hand, almost seventy-five per cent. of the bird's food is insects. Eleven woodpeckers taken in Kansas in winter contained ten per cent. of grasshopper eggs. The little bird also destroys May beetles, plant lice and ants. A single wood-borer will often kill an entire tree, and one-fifth of the downy's



COWBIRD.

animal food consists of caterpillars, many of which bore into wood and live on stems and leaves. Indeed, the downy is the most beneficial of all the useful woodpecker family.

Besides the birds noticed herewith, the pamphlet deals with many others, including the larks, butcherbird, loggerhead shrike, rose-breasted grosbeak, phoebe, wood pewee, yellow-bellied flycatcher, vireos, brown thrasher, bluebird, meadow lark, sapsucker, red-headed woodpecker, flicker, hairy woodpecker, hawks and owls, all of which are insect eaters, and decided friends of the cultivator which should be protected.

THE ENGLISH SPARROW.

This bird is a pest and of no use.

In the United States we are reaping the results of our own ignorance and folly. Since the bird was introduced in 1850 it has become established in thirty-five States and five Territories, and has done its worst in driving away our native birds and destroying buds, blossoms, fruit and grain.

It has been shown to interfere with

seventy kinds of our own birds, most of which nest about houses and gardens and are beneficial to the farm and garden. The examination of 522 stomachs shows that, while it eats wheat, oats and corn, it has little interest in insects. Of the insects which it has been found to eat, forty-seven kinds are harmful, while fifty are beneficial, which shows how much good is to be expected from it in destroying pests to counterbalance what it does in driving away our own birds that live on insects. It is clear that the English sparrow should be exterminated, that laws protecting him should be repealed, and that some intelligent, systematic action should be taken to rid the United States of his obnoxious presence. Bounty laws cannot do this, for, as has been clearly demonstrated, they do more mischief than can easily be remedied, as money is usually spent on the heads of the valuable birds that have been mistaken for the injurious ones. Small boys also are likely to do more harm than good by destroying the wrong birds. But the work might be effectively done by State boards or commissioners, who should hire trained assistants to destroy the birds and their nests.

CONCLUSION.

So far as it has gone, the examination of the stomach contents of birds has proved that, except in rare cases, where individuals attack cultivated fruits and grains, our native birds merely preserve the balance of nature by destroying weeds that plague the farmer and by checking the insects that destroy the produce of the agriculturist. The great value of birds is demonstrated. The question is first how to attract them where they have disappeared, and then how to protect the crops from their occasional depredations. Mr. Forbush, who has experimented in the matter in Massachusetts, both fed the birds and planted bushes to attract them. He says: "It is evident that a diversity of plants which encourages diversified insect life and assures abundance of fruits and seeds as an attraction to birds will insure their presence."

The cultivated crops can be protected in two ways: either by mechanical devices that frighten the birds away from the fruit or grain fields, or by the substitution of wild or cultivated kinds. To frighten the birds away, white twine can be strung across berry beds, string hung with bits of glittering waste tin over fields, while stuffed hawks and cats can be kept in orchards. To attract the birds from cultivated fruit it is well to plant some wild fruit that will bear during the weeks when the birds eat the garden or orchard crops.

HALL'S Vegetable Sicilian HAIR RENEWER

Will restore gray hair to its youthful color and beauty—will thicken the growth of the hair—will prevent baldness, cure dandruff, and all scalp diseases. A fine dressing. The best hair restorer made.

R. P. Hall & Co., Props., Nashua, N. H.
Sold by all Druggists.



ROCHESTER, N. Y., DECEMBER, 1896.

Entered in the Post Office at Rochester, N. Y., as second class mail matter.

Vicks Illustrated Monthly Magazine is published at the following rates, either for old or new subscribers. These rates include postage: One copy one year, in advance, Fifty Cents. One copy for twenty-seven months (two and one-fourth years), full advance payment, One dollar. **A Club** of five or more copies, sent at one time, at Forty Cents each, without premiums. Neighbors can join in this plan.

Free Copies. One free copy additional will be allowed to each club of ten (in addition to all other premiums and offers), if spoken of at the time the club is sent.

All contributions and subscriptions should be sent to VICK PUBLISHING CO., ROCHESTER, N. Y.

Gold-Silver.

A letter just received calls attention to the advertisement in October number of this Magazine, received through an advertising agency, which no doubt came from the National Republican Committee. The writer speaks his thoughts very plainly and in such a way that it leads us to think that he is under the impression that VICK'S ILLUSTRATED MONTHLY MAGAZINE is a political paper. No! no! far from it; we never intended to enter into a discussion of this kind. This advertisement came from a reliable advertising agency, and if any responsible firm had sent an advertisement of the Prohibition party or Silver party, it would have been inserted just the same.

Please understand we do not wish to discuss politics, but on the other hand, are always glad to hear from our subscribers and friends regarding their plants and gardens.

PUBLISHERS.

* *

Sweet Peas and Sweet Peas.

The Sunset Seed and Plant Company of California, is doing a great deal in the way of raising sweet peas, and has lately issued a pamphlet called "Sweet Pea Review," in which the principal varieties now in cultivation are described. This Company sends out this season a new variety called Red Riding Hood, which it characterizes as a "new departure in form." To give their own description of the flower, "When fully developed, the standard and wings are a pleasing rosy pink, shading to blush white at the calyx; the keel is almost completely enveloped, being nearly pure white. The standard is diminutive, and peculiarly convoluted, forming a hood around the wings which protrude in wavy form."

So, here is a sweet pea having the keel nearly concealed, and the standard never

opens, but forms a hood around the wings. There certainly can be but little to be seen, and it must be considered a degenerate type. It is a form the very reverse of the modern type evolved by the efforts of florists. The author, in the same Review, takes occasion to say "Double sweet peas are undesirable," and to other cultivators gives the advice to "drop further efforts in that direction and devote our energies to still further elevating, rather than deteriorating, this most deserving flower, the sweet pea."

The superior assumption and conceit exhibited in this expression of opinion is like that of some political orators, but, we are happy to say is seldom shown by horticultural writers.

Our readers have been informed of the remarkable advance made in the double variety of sweet pea, Bride of Niagara, and that by continuous selection from double flowers it has been brought to a state where a large percentage of its flowers have two or three banners, greatly increasing its beauty and showiness. It is not improbable that the raising of the Bride of Niagara will become a prominent feature of sweet pea growing for florists' use.

The Review characterizes Cupid, the dwarf sweet pea, as another *departure*, "departure in habit of growth," and says of it: "Pot culture of Cupid, in our own experience, has proven a failure; but outdoors its growth is satisfactory." If it is satisfactory outdoors at San Francisco, it is as truly not so in most other places, as the testimony given in this issue of the Magazine, as well as in other journals, shows. So, to come down to the truth about it, at last, it is good neither under glass nor out-of-doors, and hence these two California "departures" would be appropriately designated by the term "degenerates."

Of the Sweet Pea Review as a whole we have only words of praise. It well describes a great number of varieties and the original notes on them are valuable, especially to commercial growers. We only deprecate the fact that varieties unworthy of cultivation should be foisted upon the public merely because they have characteristics which make them a nine days' wonder, but with nothing else to recommend them.

* *

Book Notes.

THE NURSERY BOOK. A complete Guide to the Multiplication of Plants. By L. H. Bailey. Third edition. Published by the Macmillan Company, New York. Price \$1.00.

This revised edition of the Nursery Book is a most valuable volume to all gardeners, fruit-growers, farmers and even amateur cultivators. The principles and methods of propagating plants of all kinds are fully given in the simplest language and aided by all necessary illustrations. The reputation of the author is so well secured that his name is a guarantee of the worth of the book. It

should find a place in the library of every plant cultivator.

QUINCE CULTURE. By M. W. Meech, A. M. Revised and enlarged edition. Published by the Orange Judd Company, New York. Price \$1.00.

This is an illustrated hand-book for the propagation and cultivation of the quince, with descriptions of its varieties, insect enemies, diseases and their remedies. The methods of planting an orchard of quince trees and their cultivation and pruning, and all necessary attentions are very fully treated, in accordance with the latest information on these subjects, in this volume, together with descriptions of injurious insects and diseases and their remedies, all plentifully illustrated.

ECONOMIC ENTOMOLOGY. By John B. Smith, Sc. D., Professor of Entomology in Rutgers College. Illustrated. Published by Lippincott Company, Philadelphia, Pa. Price \$2.50.

This new publication is intended for the farmer and fruit-grower, and for use as a text-book in agricultural schools and colleges. It is richly illustrated, having 483 figures. As these figures of insects relate to the larval and pupal as well as adult states, and also show different parts of the insects much enlarged, most of them are composed of several distinct drawings, so that the whole number of illustrations is probably nearly 2,000. The plan of the work embraces the design of treating the elements of entomology in a scientific manner, so that the reader or student may acquire a correct fundamental knowledge of the subject, and at the same time the relation of various noxious insects to cultivated crops, and the character of their depredations is fully stated, together with the means of their destruction, or the protection of crops from injury. We have no hesitation in saying that this work embodies these two ideas more fully than any which has been previously published, and in language so simple and direct as to make it a very satisfactory treatise. The book should be eagerly sought, not only as a text-book for students, but as a mine of practical information for gardeners, farmers, fruit-growers and general horticulturists.

A YEAR IN THE FIELDS. Published by Houghton, Mifflin & Co., Boston Mass. Price \$1.50. A most interesting volume of 220 pages, beautifully illustrated with twenty lithographic plates, and handsomely printed and bound. Some extracts from its pages may be found elsewhere in this issue.

Sharp Twinges

Only the sufferer from rheumatism can realize the agony caused by this disease. It affects the joints and muscles, which become stiff and sore and cause constant suffering. The cure for rheumatism is found in Hood's Sarsaparilla, which thoroughly purifies the blood and neutralize the acid which causes the aches and pains.

Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier.

Hood's Pills do not cause pain or gripe. All druggists, 25c.

AN ATTRACTIVE LOW-PRICED COTTAGE.

Here is a neat little cottage containing all the essentials of a home for a small family. The plan shows how a square house may be treated, so as to have a pretty exterior. No one doubts that a simple rectangular system of laying out rooms is most economical. It is natural, when one makes plans for convenient houses, to select those of moderate cost, because convenience of arrangement means more to those who live in houses of this class than to those who live in the more expensive dwellings. This plan presents four good rooms on the first floor and two on the second floor. The sitting room and parlor are connected by sliding doors. The exterior of the building is simple in outline and contains no decorative material that is not necessary in the construction of the house—that is, there is no constructed decoration. In a house of this kind the question of cost is a very important matter, and the architectural effects must be secured, not through applied decoration, but through proper proportioning of the

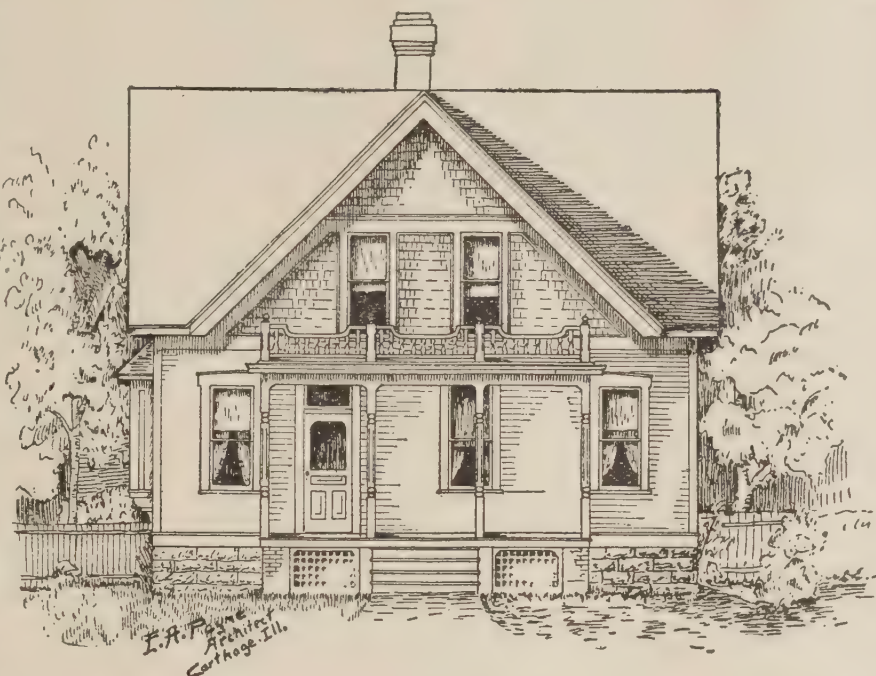
and the second story eight and a half feet, in the clear. Cellar under the whole house six and a half feet deep. Cellar walls of stone. The house is estimated to cost, in the Mississippi valley from \$800 to \$1,000, and could be built anywhere for very low cost at present rates.

supposed I had killed it, at least I thought it ought to die after such treatment. One writer says give plenty of sun. So one lot of bulbs had all the sunshine there was. Another says do not keep them in the sun, and one lot grew out of the sunshine. One says overflow the bowl with cold

water once a week; then one bulb was treated to cold water. Still another one says use tepid water for the same purpose, and I tried that. I would not dare say how many Chinese lily bulbs I have owned, but enough to try everybody's way of growing them, and with what result? Listen all, I've never succeeded in blooming one. Not even one tiny blossom. Every year I think I will never have another one, yet every year finds me the proud and confident possessor of several fine bulbs. Then commences another search through my floral magazines (of which I have hundreds, counting the old and the new) for hints on the

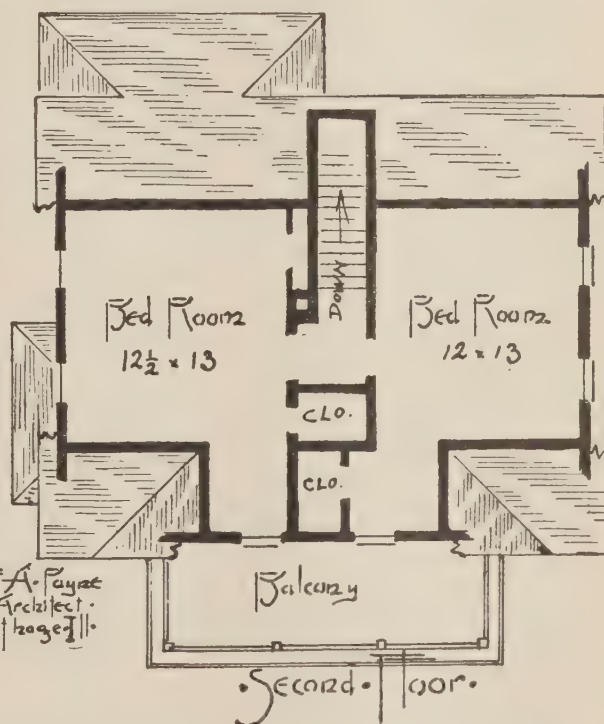
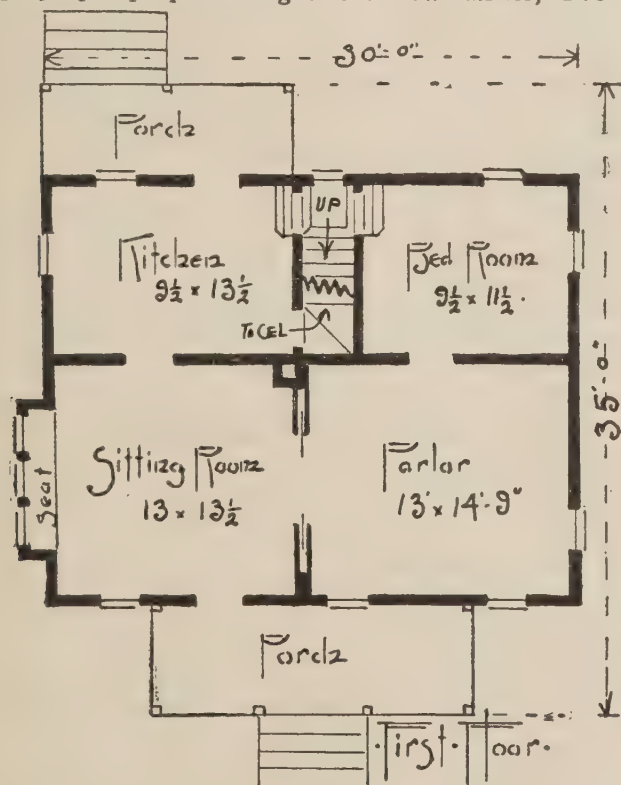
culture of sacred lilies. If I find anything I have never tried, that I am sure to try; failing to find a new way, I try again some of the ways I have tried before, always with the same result,—fine foliage, sometimes buds, but never blossoms.

Shall I try them again? Yes, most assuredly; I've made up my mind to bloom



CHINESE LILIES.

I THINK I have read every article on the culture of Chinese lilies that has come in my way for years, and I am quite certain I have followed all the advice I've found therein. I've grown them in shallow dishes, I've grown them in deep



necessary constructive parts. The outside of the upright frame is sheathed with shiplap sheathing and paper, and covered with pine siding. Roofs are covered with cypress shingles. Tin hanging gutters are provided for all eaves, except front porch, which has tin-lined cornice gutter.

The first story of the house is nine feet,

dishes, I've grown them in pebbles, I've grown them in sand, I've grown them in water, I've grown them in earth.

According to one writer's advice I very carefully removed the brown covering, taking care not to scratch or mar the bulb while so doing. Following the advice of another I cut and gashed a bulb until I

a sacred lily, and will if I live long enough, and can find one that will bloom for me. With other bulbs I have most satisfactory success. At present I have a fine lot of tulips in bud and in bloom, while crocuses, hyacinths, Easter and other lilies, even the shy lily of the valley, I have no trouble in blooming in the house, but the sacred lily—Oh! no! not at all!

S. D.

A YEAR IN THE FIELDS.

THE latest of the writings of John Burroughs, that lover of nature, who so delightfully relates what he sees in the fields, and woods, and waters, and air, who sees with the eyes of a naturalist, and the mind of a philosopher, and the soul of a poet, appear in a handsome volume, with the title given in the caption above, from the publishing house of Houghton Mifflin & Co., of Boston. Many of our readers will greatly enjoy this book; the extracts below furnish a sample of its contents:—

Perhaps there is nothing in the operations of nature to which we can apply the term intelligence, yet there are many things at first sight look like it. Place a tree or a plant in an unusual position and it will prove itself equal to the occasion, and behave in an unusual manner; it will show original resources; it will seem to try intelligently to master the difficulties. Up by Furlow Lake, where I was camping out, a young hemlock had become established upon the end of a large and partly decayed log that reached many feet out into the lake. The young tree was eight or nine feet high; it had sent its roots down into the log and clasped it around on the outside and had apparently discovered that there was water instead of soil immediately beneath it, and that its sustenance must be sought elsewhere and that quickly. Accordingly it had started one large root, by far the largest of all, for the shore along the top of the log. This root when I saw the tree, was six or seven feet long, and had bridged more than half the distance that separated the tree from the land. Was this a kind of intelligence? If the shore had lain in the other direction, no doubt at all but the root would have started for the other side. I know a yellow pine that stands on the side of a steep hill. To make its position more secure, it has thrown out a large root at right angles with its stem directly into the bank above it, which acts as a stay or guy-rope. It was positively the best thing the tree could do. The earth has washed away so that the root when it leaves the tree is two feet above the surface of the soil.

Yet both these cases are easily explained, and without attributing any power of choice, or act of intelligent selection, to the trees. In the case of the little hemlock upon the partly submerged log, roots, were probably thrown out equally in all directions; on all sides but one they reached the water and stopped growing; the water checked them; but on the land side, the root on the top of the log, not meeting with any obstacle of the kind, kept on growing, and thus pushing its way toward the shore. It was a case of survival, not of the fittest, but of that which the situation proved—the fittest with reference to position.

So with the pine tree on the side of the hill. It probably started its roots in all directions, but only the one on the upper side survived and matured. Those on the lower side finally perished, and others lower down took their places. Thus the

whole life upon the globe, as we see it, is the result of this blind groping and putting forth of nature in every direction, with failure of some of her ventures and the success of others, the circumstances, the environment, supplying the check, and supplying the stimulus, the seed falling upon the barren places just the same as upon the fertile. No discrimination on the part of Nature that we can express in the terms of our own consciousness, but ceaseless experiments in every possible direction. The only thing inexplicable is the inherent impulse to experiments, the original push, the principle of Life.

* * * * *

One season, the last day of December was very warm. The bees were out of the hive, and there was no frost in the air or in the ground. I was walking in the woods, when as I paused in the shade of a hemlock-tree I heard a sound proceed from beneath the wet leaves on the ground but a few feet from me that suggested a frog. Following it cautiously up, I at last determined the exact spot from whence the sound issued; lifting up the thick layer of leaves, there sat a frog—the wood frog, one of the first to appear in the marshes in spring, and which I have elsewhere called the “chucking frog”—in a little excavation in the surface of the leaf-world. As it sat there the top of its back was level with the surface of the ground. This, then, was its hibernaculum; here it was prepared to pass the winter, with only a coverlid of wet matted leaves between it and zero weather. Forthwith I set up as a prophet of warm weather, and among other things predicted a failure of the ice crop on the river; which, indeed, others who had not heard frogs croak on the 31st of December, had also begun to predict. Surely, I thought, this frog knows what it is about; it would have gone deeper into the ground than that if a severe winter was approaching: so I was not anxious about my coal-bin, nor disturbed by longings for Florida. But what a winter followed, the winter of 1885, when the Hudson became-coated with ice nearly two feet thick, and when March was as cold as January! I thought of my frog under the hemlock and wondered how it was faring. So, one day the latter part of March, when the snow was gone, and there was a feeling of spring in the air, I turned aside in my walk to investigate it. The matted leaves were still frozen hard but I succeeded in lifting them up and exposing the frog. There it sat as fresh and unscathed as in the fall. The ground beneath and all about it was frozen like a rock, but apparently it had some means of its own of resisting the frost. It winked and bowed its head when I touched it, but did not seem inclined to leave its retreat. Some days later, after the frost was nearly out of the ground, I passed that way, and found my frog had come out of its seclusion, and was resting amid the dry leaves. There was not much jump in it yet, but its color was growing lighter. A few more warm days, and its fellows, and doubtless itself too, were croaking and gamboling in the marshes.

This incident convinced me of two things; namely, that frogs know no more about the coming weather than we do, and that they do not retreat as deep into the ground to pass the winter as has been supposed. I used to think the muskrats could foretell an early and severe winter, and have so written. But I am now convinced they cannot; they know as little about it as I do. Sometimes on an early and severe frost they seem to get alarmed and go to building their houses, but usually they seem to build early or late, high or low, just as the whim takes them.

* * * * *

Do honey-bees injure the grape and other fruits by puncturing the skin for the juice? The most patient watching by many skilled eyes all over the country has not yet settled the point. For my own part, I am convinced that they do not. The honey-bee is not the rough-and-ready freebooter that the wasp and bumble-bee are; she has somewhat of feminine timidity, and leaves the first rude assaults to them. I knew the honey-bee was very fond of the locust blossoms, and that the trees hummed like a hive in the height of their flowering, but I did not know that the bumble-bee was ever the sapper and miner that went ahead in this enterprise, till one day I placed myself amid the foliage of a locust and saw him savagely bite through the shank of the flower and extrect the nectar, followed by a honey-bee that in every instance searched for this opening, and probed long and carefully for the leavings of her bully purveyor. The bumble-bee rifles the dicentra and columbine of their treasures in the same manner, namely, by slitting their pockets from the outside, and the honey-bee gleans after him, taking the small change he leaves. In the case of the locust, however, she usually obtains the honey without the aid of the larger bee.

* * * * *

The red and gray squirrels do not lay by winter stores; their cheeks are made without pockets, and whatever they transport is carried in the teeth. They are more or less active all winter, but October and November are their festal months.

USEFUL BOOKS GIVEN AWAY

Instructions for making Art and Fancy Work.

Mrs. Nella Daggett, of Boston, has recently written a book, “Fancy Work and Art Decorations,” that gives practical instructions for making dollies, table covers, scarfs, tray cloths, pin cushions, etc., etc., with fifty illustrations. This book, together with “Successful Home Dyeing” will be sent free to any reader who forwards the attached coupon and a 2-cent stamp to Wells, Richardson & Co., Burlington, Vt.

Coupon No. 1012.

This entitles any reader of VICKS MAGAZINE to one copy of “Fancy Work and Art Decorations,” and “Successful Home Dyeing.”

The above liberal offer is made to advertise the reliable Diamond Dyes, and to get their book upon home dyeing into the hands of women who want to dress well by making their old clothes look like new.

The fact that Diamond Dyes have been the standard home dyes for nearly twenty years, and that their sale increases from year to year, is proof positive that they have never had an equal.

Letter Box.

In this department we shall be pleased to answer any questions relating to Flowers, Vegetables and Plants, or to publish the experiences of our readers. JAMES VICK.

Moles eating Bulbs.

For several years I have been much troubled with the ground-moles eating my bulbs and destroying my spring flowers. Will you please tell me a remedy or preventive.

A. J. A.

Webatuck, N. Y.

Several kinds of mole traps are on the market and by their use a place can be rid of the vermin. It requires attention and perhaps some skill to use the mole trap to advantage. Some kill the moles with poisoned meat; bits of meat having inserted in them a little strychnine are placed in the mole runs,—it is death to the moles if they eat it. Bisulphide of carbon is another substance that may be employed. Pour into the mole runs, at distances of ten or fifteen feet apart, about a gill of carbon bisulphide and immediately cover it over. The liquid quickly volatilizes and if the fumes penetrate the runs where the moles are it will destroy them.

++

Trailing Fuchsias.—Branching Aster.

I have a trailing fuchsia bought of you a year ago last August; it is a magnificent plant, having four or five long stems four feet in length now and would have been much longer had they not been pinched back. It has many small branches and is a very vigorous plant; is in a sunny but cool location, but does not bloom. Will you kindly tell me through your Magazine what treatment it should have to produce flowers. It is a beautiful hanging plant without blossoms; still I should like to see it in flower.

Your Branching aster is a decided success here and my plants were the admiration of all who saw them; the plants literally grew like weeds and blossomed profusely. I have grown asters for several years in the same bed, mulching heavily in the fall with well-rotted horse manure, and they always do finely. I am never troubled with insect pests on them. The white branching aster is the most satisfactory white flower I have ever grown.

A. E. B.

Bradford, Vt.

It will be proper to keep the fuchsia in the same manner as here mentioned—that is in a coolish place and somewhat dry, under which conditions it will have a partial rest—until about the first of March. Then give it a warm place and more water, and when it makes its new growth it will undoubtedly show plenty of flower-buds.

The branching aster is finding friends everywhere as fast as it becomes known. The white variety is now in great demand, and the pink one will soon be almost as generally raised.

++

Violet Disease.

Will you please inform me through the columns of your valuable paper, how to cure a pest that is taking all the leaves off my violets? I enclose a leaf that you may know how it looks. What is the cause and what can be done for it?

C. C.

Chatham, Mass.

The leaves received are affected with what is called the Violet disease. It is a fungous affection known in scientific circles as *Cercospora viola*. A number of circular whitish or yellowish white spots, each with a darker center, appear on a leaf. These spots are from an eighth of

an inch to nearly a quarter of an inch in diameter. The spot thus affected is hard and dry, and after a time may fall out. The leaves may continue to develop the disease, showing other spots, until their structure is nearly destroyed and their usefulness ended. As to the treatment, in the first place the plants should have good culture. All diseased leaves should be removed as soon as they appear to be affected. As a preventive the plants should be sprayed with the Bordeaux mixture. Commence the treatment as soon as the disease is discovered and repeat it every two or three weeks. If the disease is promptly met with the remedy named, and prevented from spreading, it may not appear the following year. But one should always be on the lookout for it.

++

Liquid Manure.

Will you please tell your readers through the Magazine, the best fertilizer (liquid) for general use for house plants,—that from horse or cow stable, or hen-yard? My plan has been to take it from the horse stable, pour hot water on it, and use it when it looks about the strength of strong tea. Is it well to fertilize ferns? Shall I fertilize primroses? Mine do not grow; what shall I do for them?

SUBSCRIBER.

Liquid manure can be made from the droppings obtained from the stable, the cow-shed or the hen-house. The method described is correct. A good plant cultivator would not often find occasion to use liquid manure on ferns. As a rule these plants like a light soil; they make their growth in a short time, early in the season, and retain their foliage for a long time. Liquid manure is especially valuable for such plants as have a long and continuous season of growth and blooming. In the case of primroses not growing satisfactorily, the use of liquid manure cannot be advised off-hand,—it would be like advising the use of a remedy to a patient without knowing the nature of the disease. First discover why the plants do not grow; if properly managed from seed-time they should grow continuously until the present time, when blooming commences. When blooming freely a little liquid manure once a week may be used. The plants have probably not received the attention they needed during summer, and if, as a result, they are not now strong plants there is little hope of their becoming so. They may not have had the water they needed during the heated part of summer, and they may have been exposed to cold winds at night and the hot sun during the middle of the day, all of which conditions would be unfavorable to them and make them unthrifty.

++

Mildew.—Insects.—Weigela.

1—What causes mildew on my roses, planted in the greenhouse in a bed of sod ground two feet deep?

2—What is the best way to treat pelargoniums to get the best results for flowering, and whether they should be planted out or left in the pots?

3—What insect is it that eats into the blossom buds of the geranium? I can't see what does it. What can be used to prevent it?

4—Are there varieties of weigela with red, and with snow-white flowers?

G. H. T.

Valley Park, Mo.

1—It is impossible to say what is the cause of mildew in this particular place without a full knowledge of all the conditions relating to it. A bed of soil two feet in depth is a remarkable circumstance; eight inches would be considered a deep bed and many rose-growers are satisfied with one-half that depth of soil. The first thought suggesting itself is that it would be somewhat difficult to properly drain a bed of the depth named, and, unless unusual care has been taken to thoroughly drain this bed, it is more than probable that one cause of the mildew will be found in wet, soggy soil about the roots. The least that can be said is that the great depth of the bed is a suspicious circumstance and invites examination. A frequent cause of mildew is a cold draught of air suddenly lowering the temperature of the house. Damage is particularly apt to be done by ventilating with open doors or windows or ventilation near the bottom of the house. It is better that all ventilation should be given by openings at the highest line of the roof. Ventilators left open at night when there is a sudden fall in temperature after a warm day is favorable to the propagation of mildew. Syringing the foliage in the evening with a sharp fall of temperature in the night may be another way of producing it. We can only name these conditions and our enquirer must make his own deductions from his knowledge of the facts in the case. If the bed lacks drainage, it must be drained; if the house has been improperly aired heretofore the practise must now be stopped. And yet all these provisions do not cure the diseased plants. If the mildew is still active it can be treated with sulphur, and there is no better or more efficient way to apply it than by a solution of sulphide of potash or liver of sulphur. Dissolve an ounce of sulphide of potash in three or four gallons of water and with the solution thoroughly syringe the foliage of the plants, wetting the under as well as the upper sides of the leaves. This will kill the fungus, and if proper conditions prevail in the house afterwards the plants will have an opportunity to re-establish their vigor.

2.—The best growers raise pelargoniums—the annual blooming kinds—in pots. Plants which have been repotted in good soil the last of summer, or early in autumn, should now be making a fair growth, and this will continue during the winter, and buds will form preparatory to blooming in the spring. The plants should have a good exposure to the light and be carefully watered.

3—It is impossible to say what insect is doing the mischief here complained of. It will be well to dust insect powder over the buds, renewing it as it is washed off.

4—The best white weigela is *W. candida*, and two good red ones are *Gustave Mallet* and *Steltznerii*.



BLACKBERRIES.

The illustration presented on this page tells its own story, or in other words it shows just what it was intended to show—the large size of the Rathbun blackberry in comparison with the Snyder. That this is a great advantage, in different ways, in favor of the Rathbun need not be stated. The large size and superior appearance of the larger berry would of themselves favor a higher price on the market for the larger fruit, and this would be a gain to the grower, but the larger fruit costs less to pick it—and this is a gain in another way; but the difference in quality in favor of the Rathbun over the Snyder is far greater than the difference in size and appearance, as great as these are. The large size, fine appearance and delicious quality make a demand for the fruit of Rathbun wherever it is placed on sale, at a price much beyond that of any other blackberry. The Snyder as a table berry is quite undesirable, while no fruit could be more acceptable than the Rathbun—its great coreless berries juicy and sweet, and with a high flavor, make it the perfection of this kind of fruit. The Snyder is very hardy and it may do to raise in a climate where no better variety can be grown; but the Rathbun bears an excellent record, even in regard to hardiness. With the exception of the Snyder it is probably the hardiest of all the cultivated varieties. It is a plant of great vitality and vigor, and its tip-rooting habit is an evidence of these qualities, and not less so is its remarkable productiveness.

THE JAPANESE MORNING GLORY.

A letter from Kobe, Japan, by a correspondent of the *Citrograph*, of California, has something in regard to this plant. A portion of the letter is here republished:—

“There seems to have been considerable inquiry during the past year for Japanese Morning Glory seeds, or properly called convolvulus, and it is not surprising to those who have seen the flowers at their best. I suppose you know the Japanese do not like training them on poles or trellis work ten or fifteen feet high as we do, but to have them in pots where they can place them on a level with their eyes as they sit on their heels on the ground. They, therefore, constantly nip off the terminals, and will only have two or three flowers at a time to each pot, and from first to last, perhaps not more than twenty. On the other hand, we have had three nurseries full of them growing on bamboo canes, eight feet high and rampant, so that we found it impossible to keep each color distinct, so as to avoid mixing the seeds. We gave it up, and it is the general opinion of the numerous visitors who came to see them that they should be sown at random, and not in rows of one variety. Still, in order to have the flowers six inches, or nearly so, in diameter, as many of ours were, they should be pinched back, especially at the foot in the side branches near the ground. (Of course, if quantity is preferred to size this is unnecessary). The ground should be richly and well manured in order to have the best results.”

WINTER PROTECTION FOR STRAWBERRIES.

This subject is treated by several writers in the November number of *The Strawberry Culturist*. The writers think that winter protection is a great advantage, as it protects the plants from being thrown out of the ground by the alternate freezing and thawing of the soil. One writer, at Ashtabula, Ohio, “used leaves with sawdust to hold them in place, sawdust alone, also straw and coarse manure.” He derived the greatest benefit from leaves with enough straw to hold them in place. Manure is objected to on account of the weeds that follow its use, and sawdust sticks to the berries after a rain. Straw alone, and marsh hay are approved. In the spring, just before the plants start, they are uncovered, with a rake, enough to let the plants through readily. Either leaves, straw or marsh hay will ensure clean berries at picking time.

Another correspondent, from Albany County, N. Y., says:

“In many sections straw is the cheapest and handiest, and it makes one of the best coverings that can be found. Pine needles and forest leaves, where they can be obtained, are excellent. Evergreen boughs are good; also chaff (if it is clean), but if it is full of weed seeds, better no covering at all. We once used potato tops on a little less than an acre with excellent results. Coarse manure makes a fine covering, but of all the materials that have come under my observation, I have never found anything that will nearly

equal fine well rotted stable manure put on in the fall as soon as the ground is hard enough to hold a team and wagon, and that is the time all covering should be applied. Have it well fined and cover the whole width of the row just out of sight; and better yet, cover the whole ground if the pile will stand it.

"In manure we have a non-conductor of heat that will hold the frost as well as anything that can be found. The action of the frost during the winter will make it as fine as chaff. The spring rains will wash it down, and it will cover the entire surface of the ground thus making what is next in importance, the very best of the summer mulches. It lays so close that very few weeds will come through, yet it is no hindrance to the berry plants, which will push right through.

"And now we come to the last but very important advantage which manure has over all other materials as a covering and mulch, and that is its fertility, which is dissolved and washed into the soil by the early spring rains, there to be taken up by the plants as soon as they start. If manure cannot be had, any other material that will lie close, such as fine straw chaff, pine needles, etc., will make a good mulch."

The reader must bear in mind that it is only well-rotted manure that is here so earnestly recommended. If one is to keep free from weeds no half-rotted manure will serve the purpose, and in order to have a supply of thoroughly rotted manure it will be necessary to draw it out into piles the last of winter or early in the spring, and mix it and turn it several times during summer. This will be expensive, and cannot be followed out on a large scale. A very happy expedient is presented by a correspondent, of Connelville, Pa. Having made a new plantation in spring, he says:

"I then cultivate about once a week or as often as I can until the middle of August; there are now plenty of young plants and the rows, or beds, are from eighteen to twenty-four inches wide, leaving plenty of room for a path between. I now take some oats and scatter them among the plants and in the paths, then cultivate, and in a short time you will have a fine patch of oats, so that the plants are almost buried from sight, the oats continue to grow until frost comes, then settle down, completely covering the plants which are protected from the frost, and when the spring opens the oats have disappeared, having rotted or wasted away and the plants come through in good shape. I have half an acre and the oats are now eighteen inches tall, and I expect the plants to come out in the spring in good condition. I have tried it three years and I am satisfied with the results."

This plan appears very feasible and requires much less labor than any other, and is quite as effective. It is worthy of general trial.

THE CLEOME.

WE added the cleome to our list of annuals the past season and were delighted with it. In Gray's Manual, the plant is said to grow from two to three feet high, but ours surpassed this limit by two feet or more. It began blooming quite early in the season and continued producing new bracteate racemes all summer. The flowers are abundant, bright and showy—in color, a combination of white and rose. The plant is especially interesting just before it is in full bloom. The short-clawed petals seem loath to unfold, and remain united at their apexes until the long slender stamens,—which seem eager to make their debut in the world,—have pushed their way through the openings made by the partial unfolding of the flowers.

The dark crimson pods, some three inches in length, are also ornamental, and contain a prodigious number of seeds.

Since the plant continues to produce



CLEOME INTEGRIFOLIA.

new branches all through the season, buds, flowers in full bloom and the long stiped pods are all present at the same time. The plant grows so large that it must be given ample room to spread itself. It begins blooming when not more than a foot high, and one is surprised when a few weeks later it has grown to such generous dimensions.

The cleome is well worth a trial, by those who are not familiar with it; a summer's acquaintance will recommend it as worthy a place among the list of favorites.

It is well to take a long look ahead,—during the blustering winter, when we sit about the kindly fire,—by planning for the early spring work.

We like to vary the arrangement of the furniture in our homes, we like change, and we likewise do not wish to have our flower gardens just the same year after year. Try something new every season, and do not forget to try the cleome.

Mrs. W. A. K.

LESPEDeza SIEBOLDI OR DESMODIUM PENDULIFLORUM.

The number of autumn-flowering shrubs is so limited that every one with any pretensions to beauty has a claim to be brought into notice. Such a claim has this Lespedeza—a leguminiferous shrub, introduced from Japan by Siebold, but a native also of China. It is seen at its best during a warm September and October, such as that of 1895, and the very reverse of what we have this year experienced. In spite of these recent adverse conditions, it has managed to give a pretty display, the beauty of the flowers being much enhanced by the graceful habit of the shrub. It dies down to the stool each year, but sends up slender shoots during the summer six feet long. The flowers are borne at and near the ends of the shoots, a slender panicle springing from the axil of each leaf, and the whole forming a large branching raceme two feet long. The flowers are of a rosy-purple color. The plant is of easy culture, thriving in any soil that is fairly rich and moist. The old stools ought to be divided at intervals of every few years, the result being a more vigorous growth and blossoming. The species is known also as *Desmodium penduliflorum*, and erroneously as *Lespedeza bicolor*, which is a very different, earlier-flowering shrub, of dwarfer habit.—*The Gardeners' Chronicle*.

* *

MOSQUITOES AND FLEAS.

In a circular in regard to these pests, published by the Division of Entomology, of the United States Department of Agriculture, it is stated that at least twenty-one species of mosquitoes are present in North America, of which the most common is *Culex pungens*. Observations on the life history indicate that a generation may be completed in ten days, the egg stage lasting sixteen hours, the larval stage seven days, and the pupal stage twenty-four hours, although all of these periods may be lengthened by cool weather.

For protection against mosquitoes, the use of nets and screens in the windows and doors and about beds and the burning of pyrethrum in rooms to which mosquitoes have gained access are considered the best remedies against the pest indoors, while to prevent their breeding the draining of ponds and marshes, the introduction of fish in fishless ponds, and the use of kerosene on the surface of the water are strongly recommended. Experiments with applying kerosene to pools and ponds show that if an ounce of kerosene be applied to every fifteen square feet of water surface the larvæ and pupæ in the pool and females alighting to lay their eggs will be killed. The applications should be repeated at intervals of about a month.

The flea causing most common annoyance is *Pulex serraticeps*, infesting the dog and cat. In case of an outbreak of fleas in the house freely sprinkling pyrethrum powder about the rooms, followed by spraying the carpets and floors with benzine, and as a last resort washing the floors with hot soapsuds are recommended as efficient remedies.

THE MOON-FLOWER.

The worldly worth of anything is usually measured by the amount of gratification or pleasure it may afford. Reasoning thus, the garden-lover will find it worth his while to hunt a place to put a root or two of *Ipomæa Bona-nox*, the well-known Moon-flower, next spring. It is only an annual; but a plant raised from a cutting during the winter afforded a great deal of pleasure to the writer in its situation on an arbor. The rapidity of its growth enables it to soon cover a small arbor. Its large, clear white flowers stand out from the background of broad, green leaves making it visible even in the darkness of night, at which time the flowers are open. It is interesting to compare the times of opening and closing. The closing hours are from 7 to 8 A. M., and the opening about 7 to 8 P. M., the times apparently depending on atmospheric conditions. After the cool fall weather sets in, the time of blooming is irregular. The plant above mentioned omitted to bloom one night, and several days after the flowers might be seen during the day, and since at all times.

On two vines, 200 of the immense flowers were recently counted,—and this amount is not a limit. Its great blooming ability is the more pronounced when we learn the life of a flower is but the one night, and a fresh set of flowers is produced continuously day after day.

The climbing is accomplished by the twining of the young shoots. A wire or stout string support, with a few wooden strips to bear the weight is alone necessary.—*Meehan's Monthly*.

**

AUSTRALIAN SALT BUSH.

In view of the great interest now being taken in Australian Salt Bush, *Atriplex semibacatum*, the new forage plant for alkali soils, Director Devol of the Experiment Station at Tucson, Arizona, sends the following

METHOD OF GROWING IT.—The seeds are flat, somewhat heart-shaped, about one-tenth of an inch long, and of a redish green color. If covered in wet soil when fresh they are apt to rot, but sown before a rain and lightly covered with soil, or preferably covered with grass or weeds, and kept moderately moist they will germinate readily. They may be started in boxes or hotbeds and transplanted to the field; but plants grown in this way do not resist drouth so well as those planted where they are to remain. While young the plants require watering two or three times, but when well established they will resist quite severe drouths. Although a perennial plant, it grows so rapidly that one cutting may be obtained the first season and two the following season. It will grow in soil having more alkali than any other plant valuable for forage, and unlike most plants growing upon such soil, it has a prostrate habit,

growing to a height of but six to eight inches and spreading over several square feet of ground. Single plants have been known to reach a spread of sixteen feet, this, too, upon very alkaline soil. It is estimated that from three to six tons per acre of dried hay may be produced. Sheep and hogs relish it green, and when mixed with about one-third its weight of other hay horses and cattle eat it dried.

**

SWEET PEA CUPID.

The experience gained by cultivators in many parts of the country of the behavior of this kind of sweet pea is, that it is useless for outdoor culture. I sowed some seed in pots early in February, which did fairly well, but the plants did not flower till the first week of May, and the flower-stalks are so short that we could not use them for filling flower glasses: and thinking to increase the vigor and size of the blossoms, I tried a little artificial manure on some, and very shortly afterwards these plants turned quite sickly-looking, and stopped flowering. I also took some of the flowering plants outside, and very soon after removal from the greenhouse no more flowers could be got to expand on them. No more Cupid sweet pea for us.—*Alex. McInnes*.

Permit me to add one more to the adverse opinions of this sweet pea for outdoor culture. Here, also, it has proved quite useless for this purpose. I daresay there are some who think a sweet pea of such dwarf habit is not needed for our gardens. I do not share this view, as it appears to me that there are many purposes for which a free-flowering, non-climbing and dwarf sweet pea could be used to advantage. Cupid, it is to be feared, will not meet the objects in view.—*S. Arnott, in The Gardeners' Chronicle*.

**

STRAWBERRY, HALL'S FAVORITE.

This is a new candidate for popular favor with a career probably in view. It was originated four or five years since by John W. Hall, of Somerset County, Maryland, who says that it "Is the strongest grower of any variety that I have ever grown or seen grown. It bears a large crop of fine berries that run large and uniform in size, is firm and a good shipper. It sold in New York market the past season for twenty cents when other kinds were bringing nine and ten cents per quart. It ripens a little earlier the Bubach, runs larger in size through the season, it is also more productive and a better carrier." The editor of *The Strawberry Culturist*, who has seen it, says: "It is better quality than Bubach by far, and as a grower the Bubach is no comparison. Hall's Favorite will equal the Crescent in plant growth. When I saw it in fruit it had not been picked for several days, and not withstanding it was rainy at the time, it seemed to be about as firm as Bubach. The plant is entirely healthy." The plant has not yet been offered for sale.



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I saw one of the People's windmills which I saw recommended in your paper recently, it only cost me \$9.40 and is a splendid mill; my well is deep, but it pumps it all right and with very little wind; the neighbors all like it, and as I am a kind of a carpenter, I have agreed to put up nine mills all ready, on which I can make a nice profit, and there are many others for whom I can put up mills this fall. I don't see why every farmer should not have a windmill, when they can make it themselves for less than \$10; anyone can get diagrams and complete directions for making the windmill by sending 18 two-cent stamps to pay postage, etc., to Francis Casey, St. Louis, Mo., and there can be dozens of them put up in any locality by anyone who has the energy to do so. A FARMER.

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VICKS MAGAZINE, Rochester, N. Y.

ONE SONG MORE.

Tune throat, O bird, to wake the golden morn;
The frost lies glittering white upon the corn;
The dead leaves fall, and cooler winds that roam
Foretell that soon thou'lt seek thy winter home;
But ere thou go, oh give us one song more,
All summer sweet, from out thy crystal store.

So dreams of music thrill through cheerless days,
Bright gems of sound dropped through the purple haze;

And thoughts will come as heavenly as thy tone,
Which, but for thy sweet song, we ne'er had known,
And mem'ry too, like light from bright star cast
Will pierce once more the darkness of the past.

Sweet memories of gardens quaint and old
Where first we watched with wonder buds unfold,
And caught our first slight lisps of garden lore
In fragments small from father's goodly store,
Or learn'd from mother's words, so sweetly wise,
God's love expressed in bird-song, plants and skies.

Of later days and dreams and dalliance,
When love awoke and spoke in words intense;
When all the rainbow glints in flowers and skies
Seemed faint reflex of heart-hid harmonies,
And love itself seemed but the full-blown flower
For which all earth had waited to this hour.

So thy sweet notes, O bird, are tangled skeins
Of melody; thy resonant refrains
Ring like swift plummetts through the dark old wood,
Sounding its depths as but a bird's notes could;
Awaking echoes which as sweet reply
To each note of thy vibrant melody.

So will thy song remain to ring as clear,
As sweetly cheering, through the waning year,
Awaking memory whose gentle arts
Bring balm of blessedness to bleeding hearts;
And all we learned or loved in early ways
Remains to bless and cheer life's later days.

DART FAIRTHORNE.

**

WILD FLOWERS OF SOUTH FLORIDA.

THE southeast coast of Florida is rich in wonderful plant growths,—a perfect delight to the flower lover who gazes in amazement at some old favorite pot plant growing wild here in greatest luxuriance. Go where you will on the beach ridge in the bay hommocks, the spruce pine or high pine lands, which reach to the Everglades, and every where we find beautiful flowers.

In low wet places we find clumps of *Canna flaccida* or orchid-flowered canna, which produces the most beautiful canary-colored flowers measuring three inches the narrow way and five the wide way; the petals are beautifully crimped, and quite equal to many of the high-priced cannas now catalogued.

Another beauty is a variety of amaryllis with long slender, green leaves and pure white, six petaled, lily-like flowers, six inches in diameter, very fragrant, and found in very wet places and growing in the water at the edge of the canal and lakes.

The lantana is a perfect surprise, growing in the coarse beach sand, to thrifty bushes three to four feet high, and loaded with flowers the whole year. There is only one variety of it there, the orange and yellow; the mocking birds devour the purple-black seed berries.

Anyone who has ever grown the *Rivina humilis* as a pot plant would scarcely recognize the plant in its wild state. Thousands of these little plants grow in the hommocks and are a mass of pretty

white flowers and clusters of bright red seed berries; the plants grow to be two feet, or more, in height and quite as much in diameter.

Cabbage palms with their great grey trunks looking like columns of stone, capped with rounded heads of rich green, fan-shaped leaves, dot the beach ridge here and there, while smaller sized palms spring up all around them. One of the prettiest, a dwarf palm with finely cut leaves, makes a very fine pot plant; it is called the silver palm, the under side of the leaves being a bright silver color. The Cabbage palm when small is quite a decorative plant, and is of slow growth.

JENNIE BELDEN.

Linton, Fla.

**

KEEPING CELERY.

A writer in the *Farm Journal* gives this method:

If you want good, healthy, crisp celery all winter, try this plan: Let the celery remain where it grows as late as possible without freezing, and then dig up, leaving some roots with soil attached. Set in the cellar where the sun can get at it a part of the day, taking care not to set it so close that the air cannot circulate through it. Cover the roots with soil and keep the soil moist and tops dry,—do not make the soil so wet it will be sloppy, nor let it get so dry the tops will wilt. Open the windows whenever weather will permit.

**

Churning Done in One Minute.

I have tried the Lightning Churn, you recently described in your paper, and it is certainly a wonder. I can churn in less than one minute, and the butter is elegant, and you get considerably more butter than when you use a common churn. I took the agency for the churn here and every butter-maker that sees it buys one. I have sold three dozen and they give the best of satisfaction. I know I can sell 100 in this township, as they churn so quickly, make so much more butter than common churns and are so cheap. Someone in every township can make two or three hundred dollars selling these churns. By addressing J. F. Casey & Co., St. Louis, you can get circulars and full information so you can make big money right at home. I have made \$80 the past two weeks and I have never sold anything in my life before.

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Double Sweet Pea
Bride of Niagara

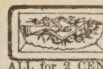
The variety has become thoroughly fixed and is sure to give satisfaction.

The handsome flowers measure more than two inches across the banners.

The *Bride of Niagara* has shown great advance over the preceding year in the percentage of double flowers.

The plant is a strong grower and very productive—giving blooms until late in the autumn. The price has been reduced to 15 cents for large package.

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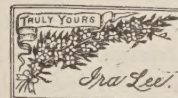
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THE ACHILLEAS.

THE achilleas or milfoils are hardy herbaceous plants, growing from six inches to three feet in height and blooming from May to September. Many of them are European species, while the prevailing color of the flowers are yellow and white. All are perfectly hardy and free from insect pests, doing well in almost any soil and situation, and so can be used to good advantage in the mixed flower border, while the species that are of dwarf growth are well adapted for the rockery.

The achilleas should be given an open, sunny situation, and sufficient space in which to properly develop themselves. As soon as the ground freezes, in December, let the plants be given a mulch of good stable manure, the coarser portion of which to be carefully removed early the ensuing spring. Good specimens of all the varieties noticed can be obtained of dealers in hardy perennial plants, and the supply can be readily increased by a careful division of the older plants, the operation being performed early in the spring, or just before the plants start into growth. Of the many varieties in cultivation the following are the most desirable and distinct:

A. ÆGYPTICA. The Egyptian Yarrow is a native of the Levant and grows about eighteen inches in height. It blooms from June to September, and has very showy silvery, fern-like foliage, and broad flat umbels of pale yellow flowers.

A. ARGENTEA. The "Silvery Yarrow" is a native of Switzerland. It grows about six inches in height and blooms during the months of June and July. It has bright silvery foliage and pure white flowers. On account of its dwarf habit of growth it is well adapted for rock work.

A. EUPATORIUM. The "Noble Yarrow" is a native of the regions of the Caspian Sea, and in cultivation attains a height of about four feet, blooming in the greatest profusion from June to October. On account of its bushy habit it is the most showy of the class. It has very broad, flat heads of bright yellow flowers and deeply cut, clear green foliage.

A. MILLEFOLIUM ROSEUM. The rose-colored milfoil is an American species, blooming from June to September. It has elegant, finely divided foliage and very showy, broad, flat heads of reddish-pink flowers.

A. MONGOLICA. The "Siberian Milfoil" grows about one foot in height and blooms from July to October. It is a very showy species, with large heads of pure white flowers.

A. PTARMICA FL. PL. is popularly known as the Double Sneezewort and the Pearl Achillaea. It is one of the most useful of border plants blooming, as it does, from June to October. For cutting purposes it is invaluable on account of the very double pure white flowers being borne in

dense heads on erect stems. The plant grows from sixteen to twenty inches in height.

A. PTARMICOIDES is popularly known as the "Fair Maids of France." It is a French species, growing about two feet in height, and blooming during the months of August and September. Flowers white, borne in dense heads.

A. TOMENTOSA. The "Woolly Yarrow" is a native of England, and in cultivation grows about six inches in height, blooming from May to July. The flowers which are very useful for cutting are of a bright golden yellow color, and borne in flat heads. It is an evergreen species with beautiful moss-like, deep green foliage, and is well adapted for the front of the border. For the rockery it is very valuable on account of its creeping habit.

CHAS. E. PARNELL.

Floral Park, N. Y.

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The first of a novel series of papers on "Good Cooking" appeared in the November issue of Good Housekeeping, being the experience of the Woman who Cooked and Went to Market, and the Man who Ate and Paid the Bills,—worthy the attention of every home dweller in Christendom.

Two papers will be given during the year 1897 on First, "The Woes of a Nervous Man at Home," by a Woman of Nerve.

Second, "The Woes of a Nervous Woman at Home," by a Man without Nerve.

"The Woman with Bundles" will also have a hearing in due time.

As will a Scriptural Discussion of the, as yet, unsettled problem of "How Poor was Job's Turkey?"

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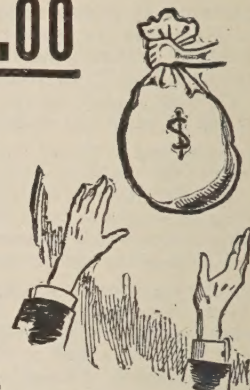
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